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Non-Medical Prescribing

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Introduction

This essay shows that the knowledge base of each discipline offers an extensive, expert, reliable, professional, evidence base and standardized information that may improve the abilities of the non medical prescriber and extend the non medical prescriber's knowledge, skill and experience.

The following arguments support the idea expressed in the first paragraph. The essay describes Mr AJB a patient with the focus on the pharmacology, pharmacodynamics and pharmacokinetics relevant to his condition and the professional issues of adherence, concordance,capacity and ethics.

Mr AJB

An assistant nurse brought Mr AJB from a mental health facility to Victoria Hospital, Candos. They admitted him to the cardiac unit although his chief complaint was urinary track infection with hematuria. Recently the doctor diagnosed his high blood pressure; he is on atacand and diazepam he has no previous mental illness or hbp and after examining him I prescribed ciprox and citrosoda for his UTI. A blood and a urine sample sent to lab. He is vegetarian and believes in Jehovah Witness.

Medical examination

The results of the physician examination determine the dosage and route of the drug so skills drawn from a physician knowledge base would be helpful. This would make non-medical prescribing more professional, based on expert knowledge, in line with current medical practice. Physicians has a history of prescription of medication going back centuries.

Cardiologists

Mr AJB medication was reviewed in the cardiac unit. Since non-medical prescribers are not specialized in cardiology, every non-medical prescriber would be well advised to be cautious and prescribe only medication according to standard indications and the ten principles of prescription ("Ten Principles of Good Prescribing - CEBM", 2017/05/10/).

Urologists

As his hematuria and uti were the chief complaints, the urologist requested an urodynamic test for Mr AJB to assess the flow of urine during micturition.. The test will check bladder tone and urine flow. The non-medical prescriber will therefore need to know something of urology so that the knowledge base of the urologist will enhance the quality of the prescription and determine whether the kidney is in the path of the infective organism.

Radiologist

Also, the radiologist reports from the KUB done, says the infection was below the bladder. This confirm the location of the infection.

Nutritionists

As Mr AJB was not fasting, the nutritionist visited AJB to plan his diet, to adjust his food intake to lower his HBP to maintain nutrient level optimal for recovery from the infection. Mr AJB is a vegetarian, so the nutritionist requested an intake and output chart, his weight, do a body composition analysis to determine his bone mass, his water, his fat mass, his muscle mass and compare with normal values for his age and gender. He also requested liver function test, blood sugar and history of medication and illness for AJB and his parent. The knowledge base of the nutritionist is critical for recovery and for change to life style

Social Workers

The social worker at Brown Sequard Mental Health Center profiled Mr AJB. He is a well paid high ranking law officer married to a teacher. They are parent to a boy and a girl. He has an extramarital relationship with a young cadet policewoman. He has an extensive social network of friends. Most of his friends drink alcohol and he drinks too and smoke socially and habitually. His wife discovered his unfaithful, behavior but wanted to give him a chance to remake their marriage. Instead, he cloistered himself into an anxiety states because of ethical concern at work.

Psychiatrists

The records show that Dr Gigaboy the psychiatrist at BSHH interviewed Mr AJB to identify the cause of his anxiety states,. He also suspected a decreased libido, perhaps sexual dysfunction and some Freudian conflict. During, the interview the honesty of Mr AJB impressed him. In the meantime,taking into consideration AJB age, gender and allergies he stabilized his anxiety states with benzodiazepine. What he did not find out was that Mr AJB anxiety was linked to his work as a law enforcement officer and later, it was established by a psychologist that the nature of Mr AJB problem was ethical.

Risk factors, Safety netting and Accountability

Adjustments in his lifestyle may prevent the persistence of the risks. Changes to drinking and smoking habit. Alcoholism and hbp runs in the family. His grandfather died of liver cirrhosis. I informed him of the potential impact of these factors on his health and longevity.

The law holds the non-medical prescriber accountable for the prescriptions. He ensures safety in prescribing by following the 10 rules (“Ten Principles of Good Prescribing - CEBM”, 2017/05/10/)..

Pharmacodynamics, Pharmacokinetics & ADME

The purpose of the medication is to change the pharmacodynamics related to the pharmacokinetics to resolve the HBP, anxiety states and UTI of Mr AJB.

The examination process includes an assessment of body functions that work with the drugs administered. Is the body capable of using, metabolizing and excreting the drug as expected? I may test the GFR, ACR and BUN of the kidneys first, the ALT and AST of the liver, and IgE for food allergies next. In the case of Mr AJB would his cardiovascular system respond to atacand, can his neurological system respond to benzodiazepine positively and does his immune system show allergy to food that has made him a vegetarian, can his urinary system work with citrosoda and can his systemic circulation integrate the ciprox long enough to reduce the pathogen population. If so, then the treatment can be started and observation followed closely. The Minimum Effective dose to start or a loading dose. Increasing the dosage as necessary.

Ciprox:.

Ciprofloxacin is an antibacterial drug of the class of fluroquinolones (Walker & Wright, 1991/12//), Iravani et al(1995) show that a dosage of 500 mg daily for seven days have a consistent therapeutic effect (Iravani, et al., 1995/03/13/).. It is distributed in the plasma, fat, tissue and the volume of distribution of ciprofloxacin is 1.74 to 5.0 L/kg (Vance-Bryan, Guay & Rotschafer, 1990/12//). The therapeutic level will depend on the adherence, concordance of AJB, the therapeutic window, the dose-response curve. Glomerular filtration and tubular secretion clears 66% of the total serum clearance. It takes 1 to 2 hours to reach peak serum concentrations.

Bile excretion,metabolism, secretion through the mucosa of the intestine eliminates the drug. Food does not change its absorption. Often food minimizes gastric distress. The half-life is about 3 to 4 hours and bioavailability is approximately 70%. Here the knowledge base of pharmacologist reveals its usefulness. It is hard to make any evidence-base prescription without it. Avoid caffeine or tea, dairy products.

Atacand:.

Atacand, an angiotensin receptor blocker (Rakugi & Ogihara, 1997/08//), blocks the receptors on blood vessels preventing angiotensin II from constricting them so blood pressure decreases. Mr AJB is on 8 mg atacand ("Atacand Dosage Guide - Drugs.com", 2019/02/22/). The volume of distribution is 0.13 L/kg . The plasma clearance is 0.37 mL/min/kg ("Atacand - FDA prescribing information, side effects and uses", 2019/02/22/),

Sometime candesartan celexietil sandoz is prescribed it is a prodrug that metabolizes to candesartand a generic medication for atacand (Gleiter & Morike, 2002///).

Citrosoda:.

Citrosoda is a urine alkalizer. It increases the pH. It relieves burning micturition, pain and clear the urine. It lowers acidity..

In may 1979 van Standen (van Staden, Maller & van Heerden, 1979/05/26/) gave citrosoda to 20 female volunteers for 8 weeks the results shows no kidney or liver damage and biochemical parameters remained within normal range showing that it is safe for at least 8 weeks, 4 grams every 6 hours. It is used for sustained urinary alkalinization because alkaline urine phagocytoses (Gargan, Hamilton-Miller & Brumfitt, 1993/07/01/) bacteria and in the case of Mr AJB also the debris from bacteria eliminated by ciprox.

Benzodiazepine:.

Mr AJB diagnosed anxiety states does not impair his mental capacity but has interfered with his work.

Samonte (Samonte & Vallente, 2018) stated that one of the class benzodiazepine diazepam , a schedule drug was used in 1963 to treat anxiety states, the same drug that AJB is using. Its site of action according to Griessner et al is the central amygdala (Griessner, et al., 2018/11/30/). The dosage is Adult: 2 mg tds, then increased if necessary to 15–30 mg od (Royal Pharmaceutical Society, 2015, p. 267)

SideEffects :.

Drugs	Common	Uncommon	Rare	Very rare
ciprox	Nausea vomiting diarrhea dizziness headache	abdominal pain anorexia	convulsion Abnormal dreams Chest pain Dysphasia Dysnoea	Steven-Johnston syndrome toxic epidermal necrolysis intracranial hypertension

(Royal Pharmaceutical Society, 2015, p. 490)

Drug	Common	Uncommon	Rare	Very Rare
Atacand candesartan celexil	Vertigo Headache			Arthralgia Rash pruritus urticaria nausea

(Royal Pharmaceutical Society, 2015, p. 133)

Drug	Common	Uncommon	Rare	Very Rare
Citrosoda	mild diuresis metabolic alkalosis		Chest pain	

(“Citro Soda Granules - Uses, Side-effects, Reviews, and Precautions - Abbott - TabletWise - UAE”, 2019/02/28/) (Royal Pharmaceutical Society, 2015, p. 677) (“CITRO-SODA Side effects, Price, Pharmacology & Alternatives | Medicine India”, 2019/03/03/),,

Drug	common	Uncommon	Rare	Very Rare
Benzodiazepine	Amnesiaa Ataxia Confusion Dependence lightheadedness drowsiness the next day muscle weakness paradoxical increase in aggression,	dizziness, gynaecomastia headache, hypotension incontinence salivation slurred speech tremor urinary retention vertigo, visual disturbances.	Apnoea Blood disorders change in libido headache Jaundice Respiratory depression	

(Royal Pharmaceutical Society, 2015, p. 267)

Drug Interaction ciprox, diazepam, citrosoda, atacand and nutrients.

Because of the decrease metabolism of Diazepam when atacand and ciprox is given concomitantly it may be wise to reduce the dosage of diazepam to prevent the building up of a higher concentration in blood (Wishart, et al., 2018/01/04/) (“Ciprofloxacin”, 2019/02/28/),,

The effects of warfarin is reduced when taken with ciprox (“Ciprofloxacin”, 2019/02/28/),

The serum concentration of Ciprofloxacin can be increased when it is combined with Candesartan cilexetil a prodrug for atacand.

The metabolism of Diazepam can be decreased when combined with Candesartan cilexetil (“Candesartan cilexetil”, 2019/02/28/) (Wishart, et al., 2018/01/04/).

Risk of severe bleeding with warfarin, sodium citrate is also used as an antiocoagulant.

ADR:. Adverse drug reactions are those reactions not expected as side effects

Contra Indications:.

Yes or No	Ciprox	atacand	citrosoda	Benzodiazepine
history of tendon disorders	yes			no
chronic psychosis				yes
CNS depression				yes
Compromised airways				yes
Respiratory depression				Yes
Obsessional states				Yes
Phobic states				Yes
Cholestasis		Yes		no

Indication:.

yes or no	ciprox	atacand	citrosoda	benzodiazepine
bacterial infection urinary tract	yes	no	yes	no
high blood pressure	no	yes	no	no
anxiety states	no	no	no	yes

Professional Issues

Legal Concern

The legal issues here are not so obvious. Article 25 of the declaration of human rights aims to preserve the rights and WHO preserve his patient right ("WHO | Patients' rights", 2019/03/02/). It is not justifiable for a patient not to have a time frame for the resolution of his health or mental health problem or being indefinitely held in an institution. After AJB case meeting the team decided that he would be discharged home after his treatment ends, he is not returning to the mental health institution. A community nurse and welfare officer will follow his case and provide support. The jurisdiction and the law of the land teaches nurses to be aware of the use of law to keep the nursing practice professional. They regulate the practice and procedures of the profession therefore the knowledge base of laws and lawyers can contribute proper delivery of nursing care according to law.

Ethical Predicament

AJB is a law enforcement officer with deep ethical beliefs that may be the cause for his current medical problem. The psychologist has established a strong link between his work, the cartels, the events at work to his anxiety, hbp but not to his UTI. With counselling, medication, socialization and psycho therapy he began to response positively. His anxiety subsided and is substituted with confidence and his talking session relieved much of the burden that was weighing him down. He was then discharged home and resumed his work.

Education and Promotion of health

In the case of Mr AJB there is an imbalance between the desired health status and the current health status cause by his recent admission for treatment of anxiety, his concomitant hbp, the urinary tract infection, his ethical work-related problems, his smoking, alcohol consumption and extramarital affairs. Counselling may help to wean off the smoking, alcohol, and the medication to reach civility, a normal familial, social, and professional conduct. Concordance with the staff and adherence to a program of health may solve the multiple problems. A knowledge base of modern pedagogy definitely enhances the skill of the nurse to implement changes in lifestyle.

Conclusion

The case of AJB illustrates the knowledge base of each discipline offerings of extensive, expert, reliable, professional, evidence base and standardized information that may improve the abilities of the non-medical prescriber and may extend the non-medical prescriber's knowledge, skill, experience and safety.

Appendices

Appendix abbreviation

AJB Andrew John Winston

GFR Glomerular filtration rate

ACR Urine albumin to creatinine ratio

ALT Alanine amino transferase aka SGPT

AST Aspartate aminotransferase aka SGOT

IgE Immunoglobulin E

UTI Urinary tract infection

HBP High blood pressure

ADME Absorption, Distribution, Metabolism, Excretion

SGOT serum glutamic-oxaloacetic transaminase

SGPT serum glutamic-pyruvic transaminase

BUN Blood Urea Nitrogen

Appendix Pen Portrait

Title: Mr

Name: AJB

Age: 45

Gender: male

Chief Complaint: urinary tract infection

Drugs: ciprox, citrosoda, atacand, diazepam

Health history: none

Family history: alcoholism, liver cirrhosis

allergies: None

Weight: 70kg

Height: 180cm

Profession: Law Enforcement Officer

Marital Status: Married

Sibling: One boy and one girl

Nationality: Mauritian

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